Childhood Lead Poisoning in New Jersey

ANNUAL REPORT

Fiscal Year

2004

July 1, 2003

to

June 30, 2004

Jon S. Corzine
Governor

Fred M. Jacobs, M.D., J.D.
Commissioner

CHILDHOOD LEAD POISONING IN NEW JERSEY

ANNUAL REPORT

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(July 1, 2003 – June 30, 2004)

New Jersey Department of Health and Senior Services
Division of Family Health Services
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WHY IS LEAD POISONING IN CHILDREN A PRIORITY FOR NEW JERSEY?

Lead is a heavy metal that has been widely used in industrial processes and consumer products. When absorbed into the human body, lead affects the blood, kidneys and nervous system. Lead's effects on the nervous system are particularly serious and can cause learning disabilities, hyperactivity, decreased hearing, mental retardation and possible death. Lead is particularly hazardous to children between six months and six years of age because their neurological system and organs are still developing. Children who have suffered from the adverse effects of lead exposure for an extended period of time are frequently in need of special health and educational services in order to assist them to develop to their potential as productive members of society.

The primary method for lead to enter the body is the ingestion of lead containing substances. Lead was removed from gasoline in the United States in the early 1980's. This action is credited with reducing the level of lead in the air, and thereby the amount of lead inhaled by children. However, significant amounts of lead remain in the environment where it poses a threat to children. Some common lead containing substances that are ingested or inhaled by children include:

- lead-based paint;
- dust and soil;
- tap water;
- food stored in lead soldered cans or improperly glazed pottery; and
- traditional folk remedies and cosmetics containing lead.

All children in New Jersey are at risk because lead-based paint and other lead-containing substances are present throughout the environment. Some children, however, are at particularly high risk due to exposure to high dose sources of lead in their immediate environment. These potential high dose sources include:

- leaded paint that is peeling, chipping, or otherwise in a deteriorated condition;
- lead-contaminated dust created during removal or disturbance of leaded paint in the process of home renovation; and
- lead-contaminated dust brought into the home by adults who work in an occupation that involves lead or materials containing lead, or who engage in a hobby where lead is used.

Today, the primary lead hazard to children comes from lead-based paint. In recognition of the danger that lead-based paint presents to children, such paint was regulated for residential use in New Jersey in 1971, and banned nationwide in 1978. This ban has effectively reduced the risk of lead exposure for children who live in houses built after 1978, but any house built before 1978 may still contain leaded paint. The highest risk for children is found in houses built before 1950, when paints contained a very high percentage of lead. There are nearly one million housing units in New Jersey, 30% of the housing in the state, which were built before 1950. Every county in the State has more than 9,000 housing units built before 1950. (Table 1 and Map 1).

Table 1

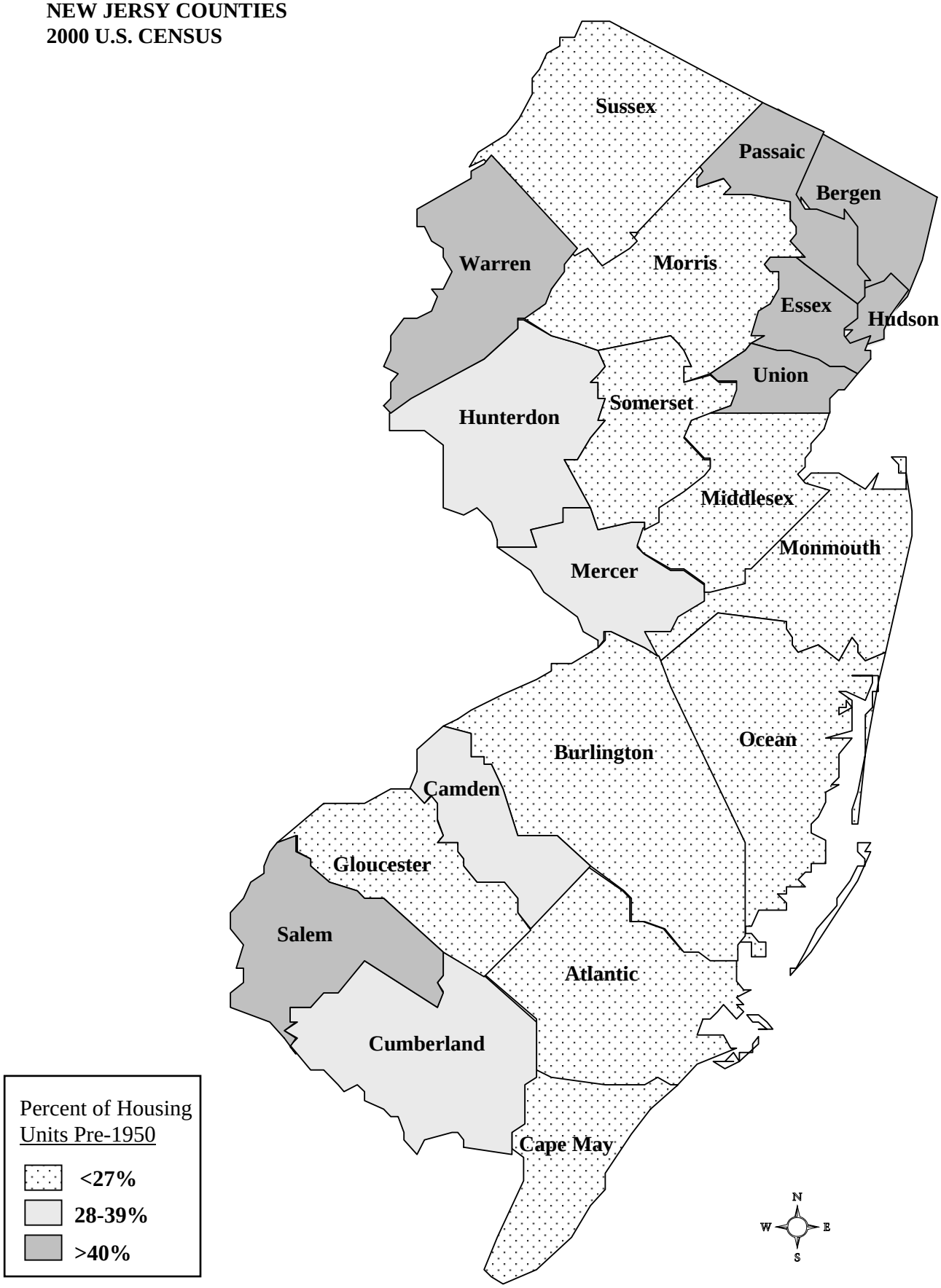
HOUSING BUILT BEFORE 1950 IN NEW JERSEY

County	Total Housing Units	# of Units Built Pre-1950	% of Units Built Pre-1950
Atlantic	114,090	24,868	21.8%
Bergen	339,820	126,125	37.1%
Burlington	161,311	26,363	16.3%
Camden	199,679	57,949	29.0%
Cape May	91,047	20,248	22.2%
Cumberland	52,863	16,316	30.9%
Essex	301,011	142,297	47.3%
Gloucester	95,054	19,029	20.0%
Hudson	240,618	125,180	52.0%
Hunterdon	45,032	11,720	26.0%
Mercer	133,280	44,117	33.1%
Middlesex	273,637	52,430	19.2%
Monmouth	240,884	56,969	23.6%
Morris	174,379	40,039	23.0%
Ocean	248,711	24,076	9.7%
Passaic	170,048	70,979	41.7%
Salem	26,158	9,623	36.8%
Somerset	112,023	21,286	19.0%
Sussex	56,528	12,221	21.6%
Union	192,945	82,231	42.6%
Warren	41,157	14,786	35.9%
Statewide	**3,310,275**	**998,852**	**30.2%**

Source: 2000 U.S. Census of Housing and Population

Map 1

PERCENT PRE-1950 HOUSING UNITS
NEW JERSY COUNTIES
2000 U.S. CENSUS



EXECUTIVE SUMMARY

This Annual Report on Childhood Lead Poisoning in New Jersey for Fiscal Year (FY) 2004 is submitted in compliance with Public Law 1995, Chapter 328, which requires the Commissioner of Health and Senior Services to issue an annual report to the Governor and the Legislature that includes a summary of the lead poisoning testing and abatement program activities in the State during the preceding fiscal year. We apologize for the delay in producing this report. There was a delay in loading records to the childhood lead poisoning surveillance system caused by some uncontrollable technical issues.

The New Jersey Department of Health and Senior Services (DHSS) maintains a Childhood Lead Poisoning Prevention Surveillance System (CLPPSS). This system collects reports from laboratories of the results of blood lead tests performed on children, identifies children with elevated test results, and notifies local health departments about the children with elevated blood lead who reside in their jurisdiction. The CLPPSS also includes a database that tracks the actions taken by the local health departments in response to children reported with elevated blood lead, as required by Chapter XIII of the New Jersey State Sanitary Code.

The number of children tested for lead poisoning in FY 2004 was 181,265, an increase of 4.8% over the 172,932 children tested during FY 2003. This number includes 92,645 children between six months and 29 months of age, the ages at which all children should be tested under State law. This number represents 42% of children six to 29 months who were tested for lead in FY 2004.

While the ideal is for all children to be tested at both one and two years of age, at a minimum all children should have at least one blood lead test done before their third birthday. Approximately 75% of the estimated number of two-year-old children in New Jersey have had at least one blood lead test in their lifetime. This is an increase over the 68% of two-year-olds in FY 2003 who had at least one blood lead test.

While 176,388 (97.3 %) children tested in New Jersey in FY 2004 had blood lead levels below the Centers for Disease Control and Prevention (CDC) threshold of 10 ug/dL, there were 4,877 (2.7%) children with a blood lead test result above this level. This included 780 children who had at least one test result of 20 ug/dL or greater (Figure 5). The distribution of results by blood lead level is shown in Figure 3.

Data for the largest municipalities (population > 35,000) is presented on the web at **www.state.nj.us/health/fhs**.

Chapter One

TESTING CHILDREN FOR LEAD POISONING

This chapter documents the continued progress of the DHSS and its partners in addressing childhood lead poisoning in New Jersey. The number of children tested for lead poisoning in FY 2004 was 181,265, an increase of 4.8% over the 172,932 children tested during FY 2003. This number includes 92,645 children between six months and 29 months of age, the ages at which all children should be tested under State law. This number represents 42% of children six to 29 months were tested for lead in FY 2004.

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Figure 1

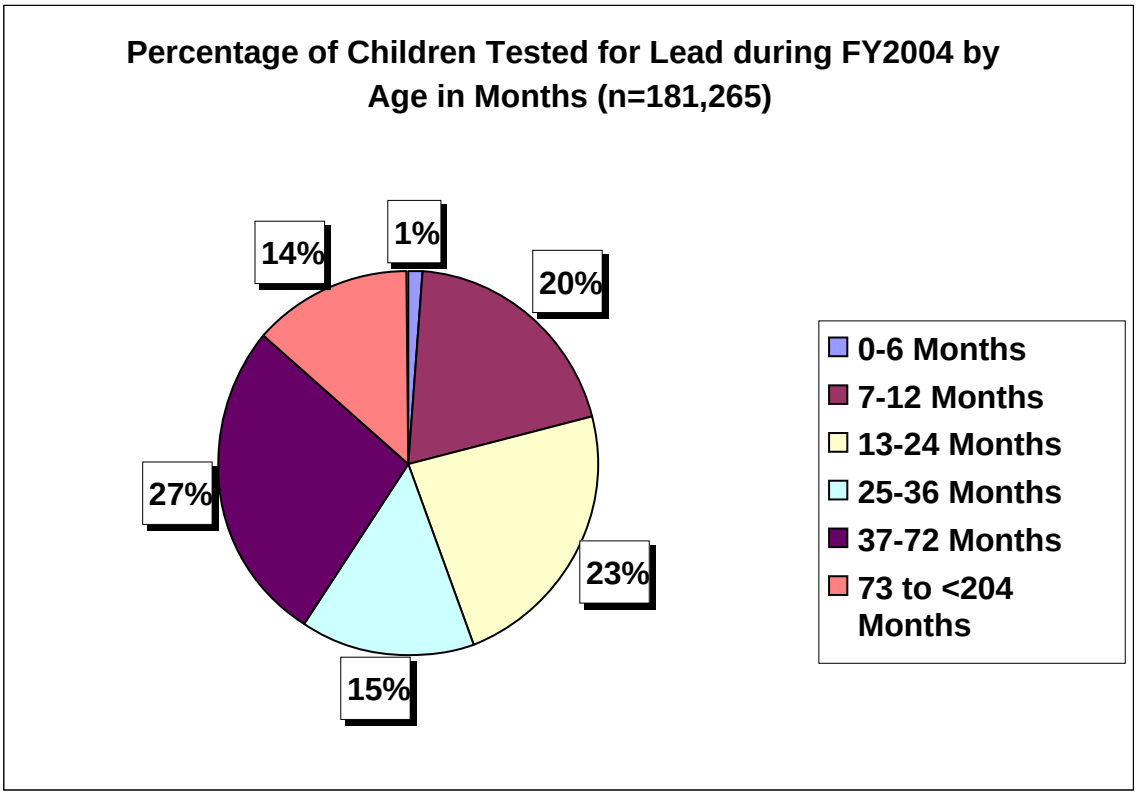


Table 2

CHILDREN <17 YEARS OLD WITH BLOOD LEAD TEST RESULTS REPORTED IN FY 2004

BY BLOOD LEAD LEVEL AND COUNTY OF RESIDENCE

County	Children Tested	< 10 ug/dL	10-14 ug/dL	15-19 ug/dL	20-44 ug/dL	≥ 45 ug/dL
Atlantic	4,166	4,094	41	12	17	2
Bergen	13,047	12,902	77	33	35	0
Burlington	3,549	3,513	17	12	6	1
Camden	7,914	7,737	114	42	19	2
Cape May	985	972	5	3	5	0
Cumberland	3,029	2,866	93	44	25	1
Essex	26,089	24,473	959	352	280	25
Gloucester	2,660	2,633	19	5	3	0
Hudson	12,535	12,252	165	63	48	7
Hunterdon	1,327	1,300	15	10	2	0
Mercer	6,052	5,801	166	50	34	1
Middlesex	12,991	12,848	84	25	31	3
Monmouth	7,698	7,542	102	28	24	2
Morris	6,732	6,678	34	11	9	0
Ocean	5,810	5,734	36	14	25	1
Passaic	13,946	13,432	308	121	80	5
Salem	572	551	15	4	2	0
Somerset	3,673	3,636	24	4	8	1
Sussex	1,283	1,272	8	2	1	0
Union	11,898	11,570	193	63	68	4
Warren	1,383	1,363	10	7	3	0
Zip Unknown	33,926	33,219	574	133	0	0
Total	**181,265**	**176,388**	**3,059**	**1,038**	**725**	**55**

Table 3

CHILDREN 6 TO 29 MONTHS OF AGE WITH BLOOD LEAD TEST RESULTS

REPORTED IN FY 2004 BY COUNTY OF RESIDENCE						
County	**No. of Children***	**Children Tested**	**Percent Tested**	**Percent <10 ug/dL**	**Percent 10-19 ug/dL**	**Percent ≥20 ug/dL**
Atlantic	6,403	2,181	34.1%	98.4%	1.2%	0.4%
Bergen	21,968	8,381	38.2%	98.8%	0.9%	0.3%
Burlington	10,728	2,315	21.6%	99.2%	0.6%	0.2%
Camden	13,663	4,160	30.4%	97.7%	2.0%	0.3%
Cape May	2,103	545	25.9%	99.3%	0.6%	0.2%
Cumberland	3,639	1,400	38.5%	94.8%	4.4%	0.8%
Essex	22,734	10,111	44.5%	94.2%	4.5%	1.3%
Gloucester	6,666	1,838	27.6%	99.3%	0.6%	0.1%
Hudson	15,205	5,076	33.4%	97.3%	2.2%	0.6%
Hunterdon	3,121	1,114	35.7%	98.5%	1.5%	0.0%
Mercer	8,810	2,925	33.2%	96.6%	2.8%	0.6%
Middlesex	19,683	7,082	36.0%	99.0%	0.7%	0.3%
Monmouth	16,744	4,729	28.2%	98.0%	1.6%	0.4%
Morris	12,987	4,601	35.4%	99.2%	0.6%	0.2%
Ocean	12,765	3,238	25.4%	98.7%	0.8%	0.5%
Passaic	14,232	6,307	44.3%	96.8%	2.6%	0.6%
Salem	1,540	333	21.6%	96.1%	3.3%	0.6%
Somerset	8,843	2,340	26.5%	99.1%	0.8%	0.1%
Sussex	3,876	792	20.4%	99.5%	0.5%	0.0%
Union	14,402	5,486	38.1%	97.3%	2.1%	0.6%
Warren	2,725	982	36.0%	98.6%	1.2%	0.2%
Zip Unknown		16,709		98.2%	1.8%	0.0%
Total	**222,837**	**92,645**	**41.6%**	**97.9%**	**1.7%**	**0.4%**

***U.S. Census 2000 children 1 and 2 years old**

Table 4
CHANGES IN CHILDREN TESTED
FY2003-2004

	FY2003	FY2004	Change 2003-04	Percent Change 2003-04
ALL CHILDREN < 17 YEARS OLD				
Number of Children in NJ*	1,977,646	1,977,646		
Number of Children Tested	172,932	181,265	8,333	4.8%
Percent Children Tested	8.7%	9.2%	0.5%	5.7%
6 - 29 MONTH OLDS				
Number of Children in NJ**	222,837	222,837		
Number of Children Tested	90,112	92,645	2,533	2.8%
Percent Children Tested	40.4%	41.6%	1.2%	3.0%

***Estimated, based on the number of children < 17 years old in the 2000 U.S. Census**
**** Estimated, based on the number of one- and two-year old children in the 2000 U.S. Census**

Table 5
CHILDREN WITH BLOOD LEAD TEST RESULTS
REPORTED IN FY2004
BY AGE AT THE TIME OF TEST

Child's Age in Months	FY2003	FY2004	Difference	Percent Change
0-5	1,225	1,090	-135	-11.0%
6-11	19,872	20,436	564	2.8%
12-29	70,240	72,209	1,969	2.8%
30-72	58,494	62,839	4,345	7.4%
73+	23,089	24,688	1,599	6.9%
Unknown	12	3	-9	-75.0%
Total	172,932	181,265	8,333	4.8%

Table 6

CHANGES IN CHILDREN TESTED AND BLOOD LEAD LEVELS

FY2003-2004

	FY2003	FY2004	Change 2003-04	Percent Change 2003-04
ALL CHILDREN <17 YEARS OLD				
Number of Children Tested	172,932	181,265	8,333	4.8%
Number of Children with Results ≥10 ug/dL	5,230	4,877	-353	-6.8%
Percentage of Children with Results ≥10 ug/dL	3.0%	2.7%	-0.3%	-10.0%
Number of Children with Results ≥20 ug/dL	832	780	-52	-6.3%
Percentage of Children with Results ≥20 ug/dL	0.48%	0.43%	-0.05%	-10.4%

Figure 2a

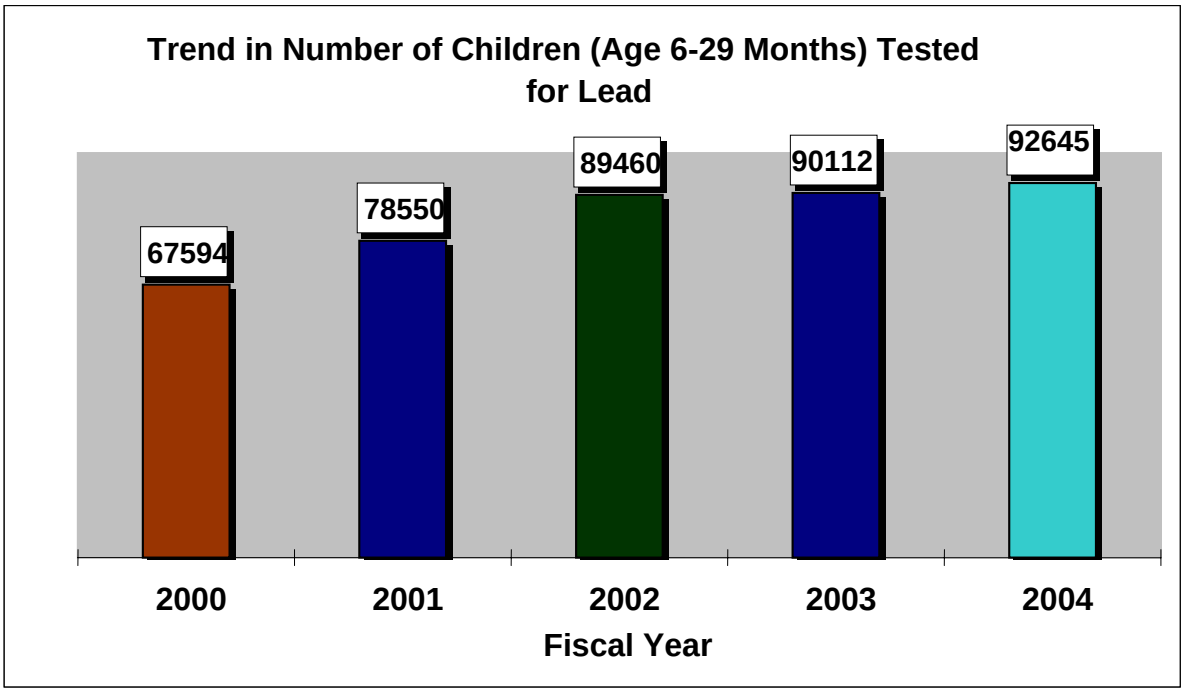
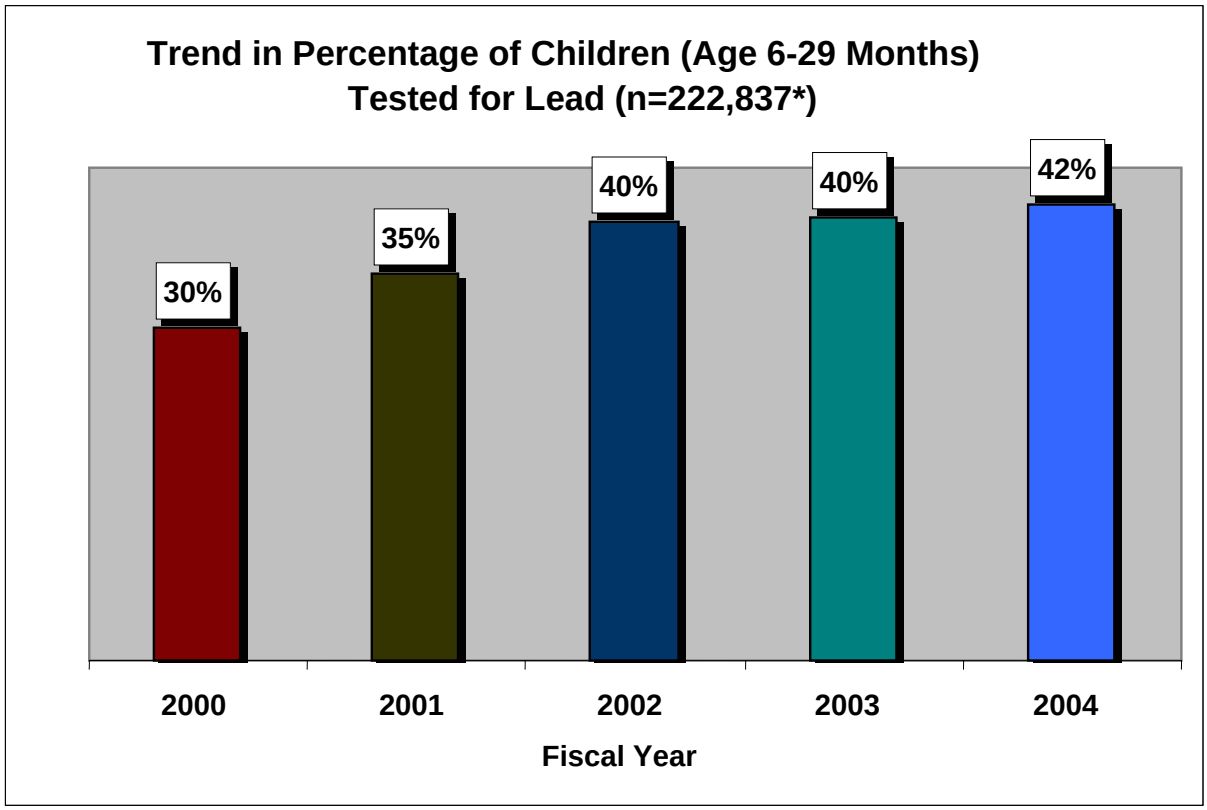


Figure 2b



Estimated, based on the number of one- and two-year-old children in the 2000 U.S. Census

CHILDREN WITH ELEVATED BLOOD LEAD

While 176,388 (97 %) children were tested in New Jersey in FY 2004 and had blood lead levels below the CDC threshold of 10 ug/dL, there were 4,877 (2.7%) children with a blood lead test result above this level. This included 780 children who had at least one test result of 20 ug/dL or greater (Figure 5). The distribution of results by blood lead level is shown in Figure 3.

Data for the largest municipalities (population > 35,000) is presented on the web at **www.state.nj.us/health/fhs**.

CDC guidelines state that a blood lead test of 10 micrograms per deciliter (ug/dL) or greater should be considered elevated. In addition, the CDC guidelines state that a confirmed blood lead test result of 20 ug/dL or greater should trigger public health follow-up, including an environmental investigation to determine the source of the lead and case management assistance to the family. Following these guidelines, blood lead test reports to the DHSS are analyzed to see if the result is above either of these thresholds. If the result is 20 ug/dL or greater, the local health department covering the community where the child resides is notified. State law and DHSS regulations require the local health department to conduct an environmental investigation of each of these cases (see Chapter 3) and to provide case management for the families of these children.

Figure 3

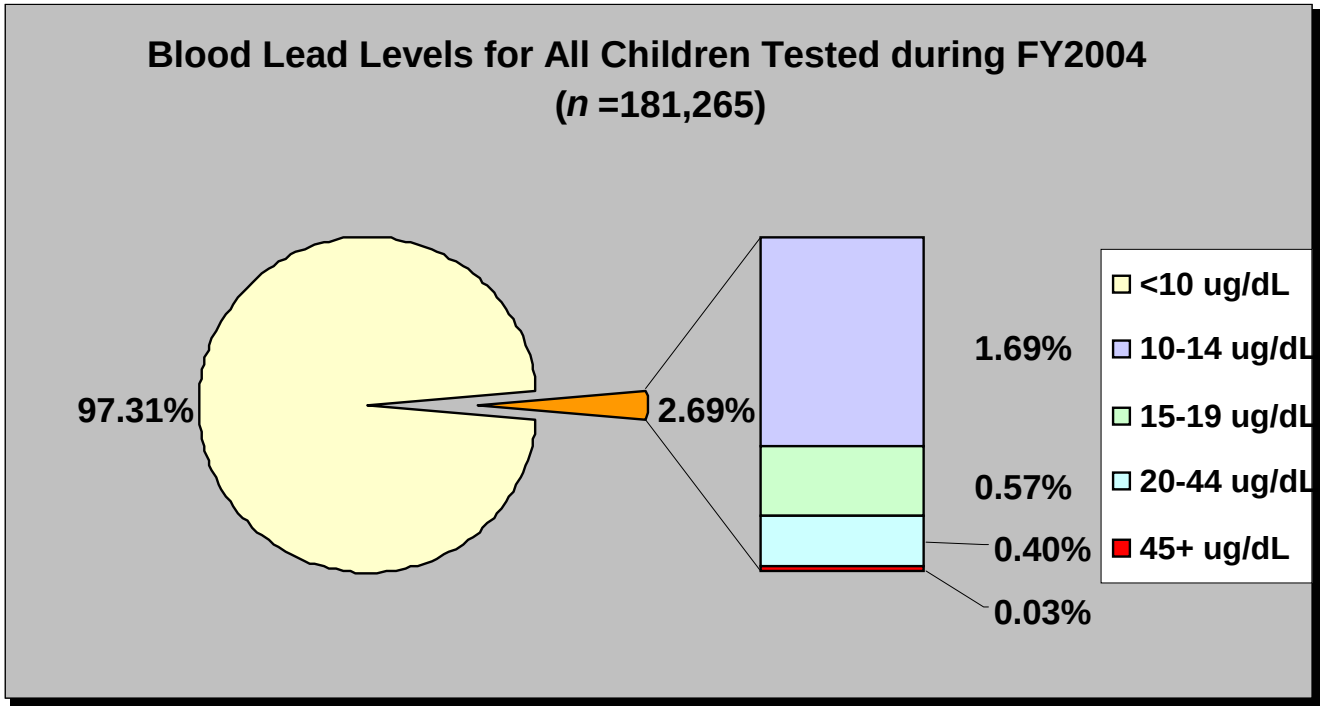


Figure 4a

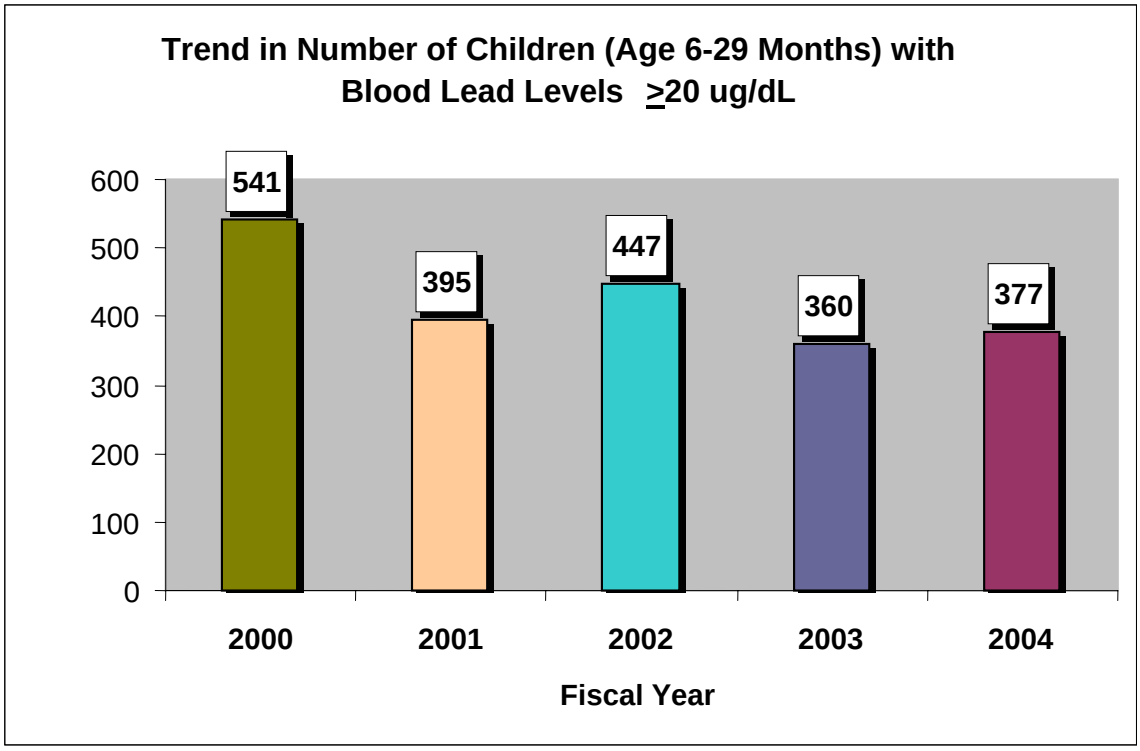

Trend in Number of Children (Age 6-29 Months) with Blood Lead Levels ≥20 ug/dL
600
500
400
300
200
100
0
541
395
447
360
377
2000
2001
2002
2003
2004
Fiscal Year

Figure 4b

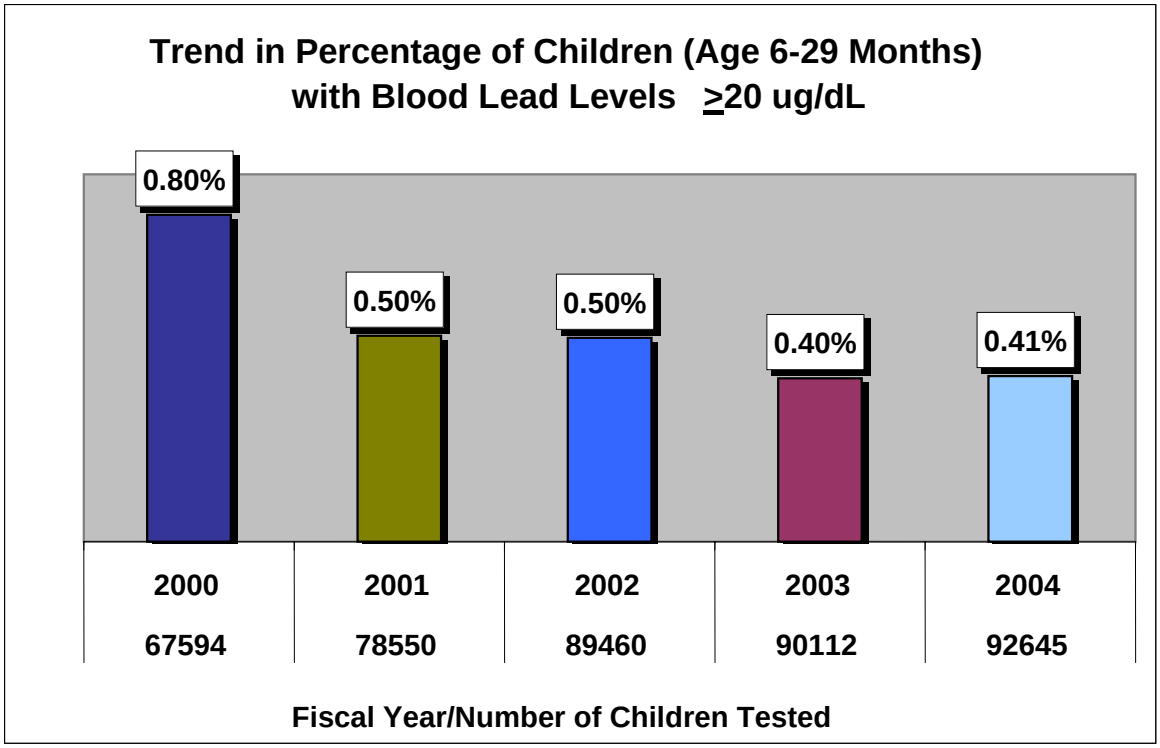
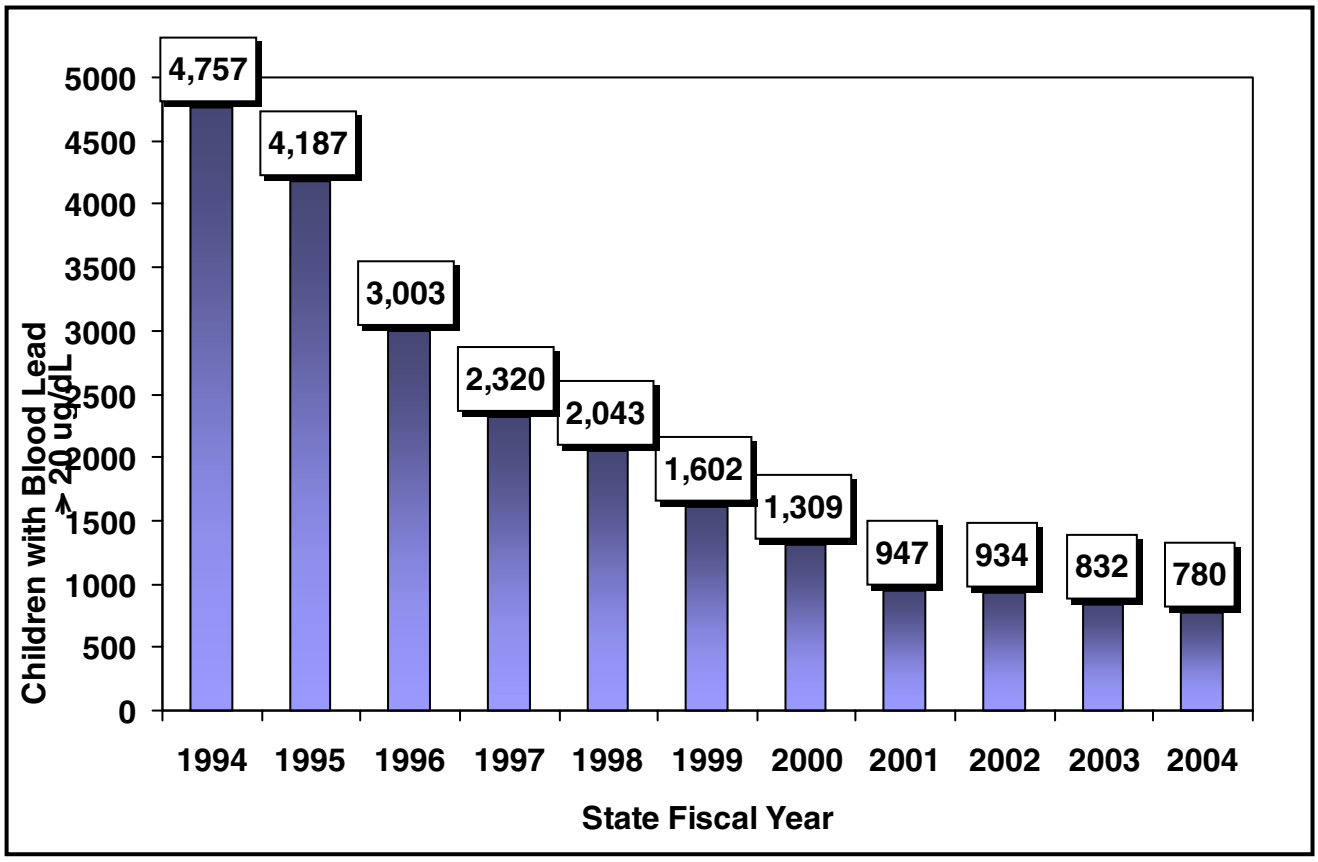

Trend in Percentage of Children (Age 6-29 Months) with Blood Lead Levels ≥20 ug/dL
0.80%
0.50%
0.50%
0.40%
0.41%
2000
67594
2001
78550
2002
89460
2003
90112
2004
92645
Fiscal Year/Number of Children Tested

Figure 5
CHILDREN WITH BLOOD LEAD ≥20 ug/dL
BY FISCAL YEAR (FY)



Chapter Three

ENVIRONMENTAL INVESTIGATIONS BY LOCAL HEALTH DEPARTMENTS

New Jersey law (N.J.S.A. 24:14A) requires local boards of health to investigate all reported cases of lead poisoning within their jurisdiction and to order the abatement of all lead paint hazards identified in the course of the investigation. The procedures for conducting these investigations are specified in Chapter XIII of the New Jersey State Sanitary Code (N.J.A.C. 8:51). The local health department must conduct an inspection of the child's primary residence, and any other places, such as a child care center or the home of a relative or babysitter, where the child spends a significant amount of time. Even if the child moves, the property where the child resided when the blood lead test was done must be inspected. The inspection includes a determination of the presence of lead-based paint, the identification of locations where that paint is in a hazardous condition (such as peeling, chipping, or flaking), and the presence of lead in dust or soil. The inspector completes a questionnaire through speaking to the child's parent or guardian to help determine any other potential sources of lead hazard exposure.

In addition, the local health department arranges for a home visit by a public health nurse to educate the parents about lead poisoning and the steps that they can take to protect their child. The nurse also provides on-going case management services to assist the family in getting follow-up testing, medical treatment, and other social services that they may require to address the effects of their child's exposure to lead.

The DHSS maintains a system for notifying each local health department of all children with elevated blood lead reported in its jurisdiction. This system is described on the web. When an elevated blood lead test result is received, it is compared with the records in the database to determine if this child has had a previously reported blood lead level $\geq$ 20 ug/dL, for whom a notice had been issued, at the same address, within the previous 12 months. For each child not previously reported, a notice is sent to the local health department which has jurisdiction over the address given on the laboratory report. This chapter presents the data on children with elevated blood lead reported to local health departments, and local health department actions in response.

Charts and tables of the environmental activity data are available on the web version of the annual report at www.state.nj.us/health/fhs

ADDRESSING CHILDHOOD LEAD POISONING IN NEW JERSEY

The goal of the New Jersey Department of Health and Senior Services is to reduce, and ultimately eliminate, childhood lead poisoning in New Jersey. In ***Healthy New Jersey 2010***, published in August 2001, the DHSS has set health objectives for the State for the next ten years, including three objectives related to childhood lead poisoning:

- To increase the percentage of children tested for lead poisoning by two years of age to 85%.
- To reduce the percentage of children whose blood lead level is ≥ 10 ug/dL by 50%.
- To increase the percentage of residential lead evaluation/risk assessments conducted which meet performance standard to 90%.

Accomplishments in FY 2004

A. Increasing Screening Rates

Lead Screening Improvement Pilot Projects – DHSS continued to collaborate with the Department of Human Services/Division of Medical Assistance and Health Services, the American Civil Liberties Union Foundation, the Association for Children of New Jersey, Irvington Department of Health and Welfare, Camden County Department of Health and Human Services, Jersey City Division of Health, Paterson Division of Health, Cumberland County Health Department, and the DHS/DMAHS-contracted HMOs, to increase lead screening in the cities of Irvington, Camden, Jersey City, Paterson, and Bridgeton/Millville. The projects in Camden and Irvington were completed in December 2003. The effectiveness of the strategies was evaluated and methods were identified and implemented in Jersey City, Paterson, and Bridgeton/Millville to increase lead screening, particularly in the Medicaid population. Successful strategies included primary care provider education and outreach and education to child care service providers in private child care centers and Abbott district preschool programs.

Provider Awareness – DHSS partnered with the New Jersey Chapter of the American Academy of Pediatrics in the development and implementation of a tool kit (Educating Physicians in their Communities: Childhood Lead Poisoning) for physicians and their staffs. A pilot was conducted with 12 practices in Trenton that provide health care services to children for the purpose of identifying a strategy that would increase health care provider screening rates and could be replicated statewide.

B. Surveillance

Medicaid Matching – DHS/DMAHS developed an information system that facilitated the tracking of blood lead screenings and lead poisoning prevalence as well as case management interventions for each lead-burdened child. The information derived from these systems will be useful for targeting outreach and monitoring timely follow-up care. Quarterly lead matches were performed between the Medicaid enrollment file and the DHSS Childhood Lead Poisoning Surveillance System (CLPSS).

45% of the children that were enrolled in Medicaid during the FY2004 had been tested for lead, as per the data match results.

Foster Care Children – Lead matches were performed between the Division of Youth and Family Services (DYFS) files and the CLPSS. 50% of children enrolled during FY2004 were tested for lead, as per the

data match results.

Electronic Reporting – Ninety two percent (92%) of all laboratory test results during the fiscal year were electronically reported.

Immunization Registry - A process was established to link blood lead test result records with records in the New Jersey State Immunization Information System (NJSIIS). A field for recording of blood lead test data was incorporated into the design for revision and expansion of the System. This enabled primary care providers to access the blood lead testing records for children in their care.

C. Follow-up of Children with Elevated Blood Lead

Grants to Local Health Departments - DHSS budgeted $2,165,170 for grants to 15 local health departments to support follow-up activities on behalf of children reported with elevated blood lead, including environmental inspections, home visiting and case management.

Enforcement of Chapter XIII - Chapter XIII of the NJ State Sanitary Code (N.J.A.C. 8:51) – Childhood Lead Poisoning was readopted without changes. N.J.A.C. 8:51 consists of regulations regarding environmental investigations and case management of children with lead poisoning. They specify actions to be taken by local health departments to follow-up children identified with elevated blood lead levels. They include standards for conducting an investigation of the child's environment, determining when a lead hazard is present and the remediation of any hazards identified.

D. Public and Professional Education

Childhood Lead Poisoning Prevention (CLPP) Week (October 19-25, 2003) - The four regional lead poisoning prevention coalitions planned and implemented activities statewide. DHSS staff, in partnership with the Interagency Task Force on the Prevention of Lead Poisoning, coordinated an event that was held at the State House.

Training for Local Health Department Staff - The DHSS provided training for local health department staff engaged in childhood lead poisoning prevention and follow-up work through the Child Health Regional Network.

E. Strengthening Collaborations

Statewide Planning - DHSS continued to be an active participant in the New Jersey Interagency Task Force on the Prevention of Lead Poisoning. Through the Task Force, DHSS staff from Family Health Services, Consumer and Environmental Health Services, and Occupational Health Services worked with their colleagues in other State agencies and community-based organizations to develop and implement policies and projects to reduce childhood lead poisoning in New Jersey. The Task Force served in an advisory capacity and individual members served on workgroups to develop a statewide plan to eliminate childhood lead poisoning by 2010. Work groups were formed to develop goals, objectives and strategies in five key areas: surveillance (data collection and analysis); identification and follow-up (screening and case management); education (individual and community-based outreach); lead-safe maintenance, rehabilitation and abatement; and environment (air, water, soil). The Strategic Plan for Prevention of Lead Poisoning in New Jersey, which was completed in FY 2003, was used as a basis for the New Jersey Childhood Lead Poisoning Elimination Plan.

Regional Coalitions - $220,000 of the FY 2004 State appropriation for Childhood Lead Poisoning was used to support four regional childhood lead poisoning prevention coalitions which were established in FY 2003 to develop local lead poisoning education programs. Each coalition provided information and training to individuals and program staff that serve young children and their families; provided professional education and training to pediatric health care providers about the continuing need to screen young children for lead poisoning; and coordinated the local planning and implementation of activities for Childhood Lead Poisoning Prevention Week.

- Bergen/Passaic Regional Coalition - The coalition sponsored a training, conducted by NJ Citizen Action, for outreach staff and other staff of health, education, human services and community-based organizations. Lead poisoning prevention materials were distributed to child care centers and a training was provided to the directors and family workers in the Passaic Abbott District. Paterson Abbott District conducted workshops for parents. The coalition conducted in-services/grand rounds for hospital-based healthcare professionals.

- Lead Education, Advocacy and Prevention (LEAP) Regional Coalition - The Leadie Eddie mobile educational van, supplied by Gateway Northwest MCH Network, has been able to increase its coverage area and has collaborated with its key partners in reaching children and their parents and/or caregivers. Successful outreach to families and the general public was conducted through health fairs and sponsorship at minor league baseball games in Trenton, Somerset, and Newark.

- Monmouth/Ocean Regional Coalition - A bilingual outreach worker was hired to reach the non-English speaking population. Physicians were surveyed to assess their barriers in performing in-office screening of children for blood lead.

- Southern New Jersey Regional Coalition – Funded agency staff were instrumental in the development of the “Which Child Has Lead Poisoning” artwork which was used extensively throughout the state during the Summer 2003 media campaign. The artwork was used on billboards in 13 northern and central counties and on interior NJ Transit bus placards. A collaboration was firmly established with the Southern New Jersey Perinatal Cooperative’s Healthy Mothers/Healthy Babies to enhance outreach and education to high/at-risk pregnant women and the parents/caregivers of infants and toddlers.